FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 08/12/09
Date Received: 08/11/09
Project: Alaskan Copper & Brass, F&BI 908065
Date Analyzed: 08/11/09

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR pH USING EPA METHOD 9040C

Sample ID Laboratory ID	pH
CB330102 908065-01	6.60

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 08/12/09
Date Received: 08/11/09
Project: Alaskan Copper & Brass, F&BI 908065
Date Analyzed: 08/11/09

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TURBIDITY USING METHOD SM2130B

Results Reported as NTU

Sample ID Laboratory ID	Date Sampled	Time Sampled	Turbidity
CB330102 908065-01	08/11/09	11:45	4.1
Method Blank			<0.5

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	CB330102	Client:	Landau Associates
Date Received:	08/11/09	Project:	Alaskan Copper & Brass, F&BI 908065
Date Extracted:	08/11/09	Lab ID:	908065-01
Date Analyzed:	08/11/09	Data File:	908065-01.053
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	btb

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	100	60	125
Holmium	111	60	125

Analyte:	Concentration ug/L (ppb)
Copper	20.8
Zinc	9,310
Lead	1.63

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	Method Blank	Client:	Landau Associates
Date Received:	NA	Project:	Alaskan Copper & Brass, F&BI 908065
Date Extracted:	08/11/09	Lab ID:	I9-332 mb
Date Analyzed:	08/11/09	Data File:	I9-332 mb.046
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	btb

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	109	60	125
Holmium	110	60	125

Analyte:	Concentration ug/L (ppb)
Copper	<1
Zinc	<1
Lead	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 08/12/09
Date Received: 08/11/09
Project: Alaskan Copper & Brass, F&BI 908065

QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR pH BY METHOD 9040C

Laboratory Code: 908068-02 (Duplicate)

Analyte	Sample Result	Duplicate Result	Relative Percent Difference	Acceptance Criteria
pH	6.83	6.86	0	0-20

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 08/12/09
Date Received: 08/11/09
Project: Alaskan Copper & Brass, F&BI 908065

QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TURBIDITY USING METHOD SM2130B

Laboratory Code: 908061-01 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	Relative Percent Difference	Acceptance Criteria
Turbidity	NTU	1.4	1.4	0	0-20

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 08/12/09
Date Received: 08/11/09
Project: Alaskan Copper & Brass, F&BI 908065

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL METALS USING EPA METHOD 200.8

Laboratory Code: 908055-01 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	Relative Percent Difference	Acceptance Criteria
Copper	ug/L (ppb)	7.28	7.65	5	0-20
Zinc	ug/L (ppb)	16.3	14.8	10	0-20
Lead	ug/L (ppb)	2.39	2.35	2	0-20

Laboratory Code: 908055-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Copper	ug/L (ppb)	20	7.28	97 b	50-150
Zinc	ug/L (ppb)	50	16.3	99 b	50-150
Lead	ug/L (ppb)	10	2.39	101 b	50-150

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Copper	ug/L (ppb)	20	103	70-130
Zinc	ug/L (ppb)	50	126	70-130
Lead	ug/L (ppb)	10	104	70-130

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Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

A1 – More than one compound of similar molecule structure was identified with equal probability.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for this range fell outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte indicated may be due to carryover from previous sample injections.

d - The sample was diluted. Detection limits may be raised due to dilution.

ds - The sample was diluted. Detection limits are raised due to dilution and surrogate recoveries may not be meaningful.

dv - Insufficient sample was available to achieve normal reporting limits and limits are raised accordingly.

fb - The analyte indicated was found in the method blank. The result should be considered an estimate.

fc – The compound is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. The variability is attributed to sample inhomogeneity.

ht - The sample was extracted outside of holding time. Results should be considered estimates.

ip - Recovery fell outside of normal control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j – The result is below normal reporting limits. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The analyte result in the laboratory control sample is out of control limits. The reported concentration should be considered an estimate.

jr - The rpd result in laboratory control sample associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the compound indicated is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc – The sample was received in a container not approved by the method. The value reported should be considered an estimate.

pr – The sample was received with incorrect preservation. The value reported should be considered an estimate.

ve - The value reported exceeded the calibration range established for the analyte. The reported concentration should be considered an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The pattern of peaks present is not indicative of diesel.

y - The pattern of peaks present is not indicative of motor oil.

AQUATIC RESEARCH INCORPORATED

LABORATORY & CONSULTING SERVICES
3927 AURORA AVENUE NORTH, SEATTLE, WA 98103
PHONE: (206) 632-2715 FAX: (206) 632-2417

CASE FILE NUMBER:	FBI004-85	PAGE 1	
REPORT DATE:	08/12/09		
DATE SAMPLED:	08/11/09	DATE RECEIVED:	08/11/09

FINAL REPORT, LABORATORY ANALYSIS OF SELECTED PARAMETERS ON WATER SAMPLES FROM FRIEDMAN & BRUYA, INC. / PROJECT NO. 908065

CASE NARRATIVE

One water sample was received by the laboratory in good condition. Analysis was performed according to the chain of custody received with the sample. No difficulties were encountered in the preparation or analysis of this sample. Sample data follows while QA/QC data is contained on the following page.

SAMPLE DATA

SAMPLE ID	FOG (mg/l)	HARDNESS (mgCaCO3/l)	TSS (mg/l)
CB330102	4.02	21.9	2.3

AQUATIC RESEARCH INCORPORATED

LABORATORY & CONSULTING SERVICES
3927 AURORA AVENUE NORTH, SEATTLE, WA 98103
PHONE: (206) 632-2715 FAX: (206) 632-2417

CASE FILE NUMBER: FBI004-85 **PAGE 2**
REPORT DATE: 08/12/09
DATE SAMPLED: 08/11/09 **DATE RECEIVED:** 08/11/09
FINAL REPORT, LABORATORY ANALYSIS OF SELECTED PARAMETERS ON WATER SAMPLES FROM FRIEDMAN & BRUYA, INC. / PROJECT NO. 908065

QA/QC DATA

QC PARAMETER	FOG (mg/l)	HARDNESS (mgCaCO3/l)	TSS (mg/l)
METHOD	EPA 1664	EPA 130.2	SM20 2540D
DATE ANALYZED	08/12/09	08/12/09	08/11/09
DETECTION LIMIT	2.00	2.00	0.50
DUPLICATE			
SAMPLE ID		CB330102	BATCH
ORIGINAL		21.9	56
DUPLICATE		22.9	60
RPD	NA	4.37%	6.90%
SPIKE SAMPLE			
SAMPLE ID		CB330102	
ORIGINAL		21.9	
SPIKED SAMPLE		41.6	
SPIKE ADDED		20.0	
% RECOVERY	NA	98.70%	NA
QC CHECK			
FOUND	8.50	38.3	9.2
TRUE	8.06	40.0	10
% RECOVERY	105.46%	95.77%	92.00%
BLANK	<2.00	<2.00	<0.50

RPD = RELATIVE PERCENT DIFFERENCE.
NA = NOT APPLICABLE OR NOT AVAILABLE.
NC = NOT CALCULABLE DUE TO ONE OR MORE VALUES BEING BELOW THE DETECTION LIMIT.
OR = RECOVERY NOT CALCULABLE DUE TO SPIKE SAMPLE OUT OF RANGE OR SPIKE TO LOW RELATIVE TOO SAMPLE CONCENTRATION.

SUBMITTED BY:

Steven Lazoff
Laboratory Director

908065

LANDAU ASSOCIATES

☑ Seattle (Edmonds) (425) 778-0907
☐ Tacoma (253) 926-2493
☐ Spokane (509) 327-9737
☐ Portland (Tigard) (503) 443-6010
☐ _____

ME 8/11/09 AI3

Date 8/11/09

Page 1 of 1

Chain-of-Custody Record

Project Name Alaskan Copper & Brass Project No. _____

Project Location/Event Seattle, WA

Sampler's Name GJH

Project Contact Landau Associates / Joe Kalmar / Alaskan Copper Works / Marten Law Group / Gerald Thompson / Jeff Kray

Send Results To " " " "

Turnaround Time
~~☐ Standard~~ BA
☑ Accelerated
☐ 2 Y 4

Sample I.D.	Date	Time	Matrix	No. of Containers	Testing Parameters: Zn, Cu, Pb, Hardness, O&G, TSS, pH, Turbidity	Observations/Comments
01 ACCB330102	8/11/09	1145	H2O	3	X X X	

Labeled

Observations/Comments:

___ Allow water samples to settle, collect aliquot from clear portion

NWTPH-Dx:
___ run acid wash/silica gel cleanup
___ run samples standardized to _____ product

___ Analyze for EPH if no specific product identified

VOC/BTEX/VPH (soil):
___ non-preserved
___ preserved w/methanol
___ preserved w/sodium bisulfate
___ Freeze upon receipt

___ Dissolved metal water samples field filtered

Other _____

Special Shipment/Handling or Storage Requirements Iced

Method of Shipment Lab dropoff

Relinquished by	Received by	Relinquished by	Received by
Signature	Signature	Signature	Signature
Printed Name Gary Hartzing	Printed Name VINH	Printed Name	Printed Name
Company Landau Associates	Company FBI	Company	Company
Date 8/11/09 Time 1300	Date 08/11/09 Time 1:10 PM	Date _____ Time _____	Date _____ Time _____

WHITE COPY - Project File YELLOW COPY - Laboratory PINK COPY - Client Representative

Samples received at 7 °C

Rev 4/01

AKC-0021576

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Charlene Morrow, M.S.
Yelena Aravkina, M.S.
Bradley T. Benson, B.S.
Kurt Johnson, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
TEL: (206) 285-8282
FAX: (206) 283-5044
e-mail: fbi@isomedia.com

August 12, 2009

Joe Kalmar, Project Manager
Landau Associates
130 2nd Ave. S.
Edmonds, WA 98020

Dear Mr. Kalmar:

Included are the results from the testing of material submitted on August 11, 2009 from the Alaskan Copper & Brass, F&BI 908065 project. There are 9 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
c: Gerry Thompson, Jeff Kray
NAA0812R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on August 11, 2009 by Friedman & Bruya, Inc. from the Landau Associates Alaskan Copper & Brass, F&BI 908065 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Landau Associates
908065-01	CB330102

The sample was sent to Aquatic Research for hardness, oil and grease, and TSS analyses. Review of the enclosed report indicates that all quality assurance was acceptable.

All quality control requirements were acceptable.